UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,519	07/17/2004	Vince I. Grolmusz		4518

37888 7590 10/13/2009

VINCE GROLMUSZ
UGRON GABOR U.8.
BUDAPEST, 1118
HUNGARY

EXAMINER	
CERVETTI, DAVID GARCIA	
ART UNIT	PAPER NUMBER
2436	

MAIL DATE	DELIVERY MODE
10/13/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/710,519	GROLMUSZ, VINCE I.	
	Examiner	Art Unit	
	David García Cervetti	2436	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments filed 4/30/08 and 12/12/08 have been fully considered.

2. Claims 1-6 are pending and have been examined.

Response to Amendment

3. Regarding applicant's argument against the Double Patenting rejection, Examiner points that the preamble of the claims is different, not so much the steps, i.e. "a method of transmitting doing XYZ" and "a method of storing doing XYZ" where XYZ are the same, Both will accomplish the other's objective, if doing XYZ stores, then it must also transmit, absent some other additional element or step.

4. In response to applicant's arguments, the recitation of transmitting or storing has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

5. In response to applicant's argument that one stores (the other application) while the other transmits (the instant application), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior

art. If the prior art structure is capable of performing the intended use, then it meets the claim.

6. Applicant's personal opinions found under the heading of "Opposing claim rejections – 35 USC 103" are noted but are not related to the patentability of the claimed subject matter, and thus no further consideration is given.

7. Applicant's disparaging comments about the prior art are noted, but are also irrelevant. At issue is not whether the cited arts works or is better/worse than the claimed subject matter, but whether the cited art or combination could reasonably teach the claimed subject matter.

8. Further, the patentability of Kutin's papers is not what this examination process is trying to establish, but whether someone of ordinary skill in the art, based on the article and Liu's invention, could come up with the claimed subject matter.

9. Further, since Applicant appears to admit that Kutin's teachings are an improvement on some of his earliest works, then Kutin teaches the present invention, albeit not an architectural embodiment. Kutin's teachings relate to graph theory, which relates to network communications, thus, applying Kutin's teachings to such an environment would have been obvious to someone of ordinary skill in the art.

10. **In response to applicant's argument that the references fail to show certain features of applicant's invention**, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Applicant argues, but the claims fail to show a digital environment, or communication between computers in a network without using encryption, etc. The claims do not describe a network architecture, nowhere in the

claims is there a network element, or a computer, or a node. The intended use perhaps is communications in a network environment, but the claims fail to capture that. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

12. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

13. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Information Disclosure Statement

14. It is noted that Applicant is the author of a number of papers on the instant application's topic, but has failed to provide them. Applicant is reminded of his duty to disclose all information known to him to be material to patentability.

15. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. Examiner requests a copy of each of the cited references be provided.

Double Patenting

16. Claims 1-6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of US Patent 7606847. Although the conflicting claims are not identical, they are not patentably distinct from each other because

- a method for dense and secure transmission of signals and information using a small number of channels, the method comprising a) choosing an appropriate integer modulus m, positive integer n, corresponding to the number of bits to be en-coding, and generating n x n matrix A with integer elements where the diagonal elements of A differs modulo m from all the other elements of their column, and where A can be written as matrix product BC where B is an n x t matrix, C is a t x n matrix, where t is less than n; (b) encoding the length-n vector x to the length-t vector xB, by vector- matrix product modulo m; (c) transmitting the coordinates of.the length-t vector xB on t channels; (d) retrieving the coordinates of the vector by computing xBC=xA by vector-matrix product modulo m; (e) for every coordinate of vector xBC=xA, filtering out the terms added as

the linear combination of other coordinates of vector x" **(claim 1, instant application) is analogous to**

- a method for dense encoding and retrieving of information represented in electronic computers, the method comprising (a) choosing an appropriate modulus m, positive integer n, corresponding to the number of bits to be encoding, and generating n x n matrix A with integer elements where the diagonal elements of A differs modulo m from all the other elements of their column, and where A can be written as matrix product BC where B is an n x t matrix, C is a t x n matrix, where t is less than n; (b) encoding the length-n vector x to the length-t vector xB, by vector- matrix product modulo m; (c) storing the length-t vector xB in physical computational devices;-
(d) retrieving the stored vector by computing xBC=xA by vector-matrix product modulo m; (e) for every coordinate of vector xBC=xA, filtering out the terms added as the linear combination of other coordinates of vector x **(claim 1, copending application).**

17. The main difference being limitation c, where the instant application transmits the Coordinates, while copending application stores it in computational devices, implying that somehow the coordinates must have been transmitted.

18. This is a provisional obviousness-type double patenting rejection because the conflicting claims of the instant application have not in fact been patented.

19. Claims 1-9 of US Patent 7606847 contain every element of claims 1-6 of the instant application and thus anticipate the claims of the instant application.

20. Claims 1-6 of the instant application therefore are not patently distinct from the copending application claims and as such are unpatentable for obvious-type double patenting. A later patent/application claim is not patentably distinct from an earlier claim if the later claim is anticipated by the earlier claim.

21. "A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or anticipated by, the earlier claim. In re Lon.qi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berq, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species with that genus). "ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

11. "Claim 12 and Claim 13 are generic to the species of invention covered by claim of the patent. Thus, the generic invention is "anticipated" by the species of the patented invention. Cf., Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (holding that an earlier species disclosure in the prior art defeats any generic claim) 4. This court's predecessor has held that, without a terminal disclaimer, the species claims preclude issuance of the generic claim. In re Van Ornum, 686 F.2d 937,944, 214 USPQ 761,767 (CCPA 1982); Schneller, 397 F.2d at 354. Accordingly, absent a terminal disclaimer, claims 12 and 13 were properly rejected under the

doctrine of obviousness-type double patenting." (In re Goodman (CA FC) 29 USPQ2d 2010 (12/3/1993).

Claim Rejections - 35 USC § 101

22. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

23. Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

24. Claim(s) 1-6 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, **a statutory "process"** under 35 U.S.C. 101 **must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing**. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The method including steps of … is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent. Further, the claims are directed to an abstract idea.

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

26. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US Patent Application Publication 2003/0186650), and further in view of Kutin (NPL "Constructing Large Set Systems with Given Intersection Sizes Modulo Composite Numbers").

Regarding claim 1, Liu teaches a method for dense and secure transmission of signals and information using a small number of channels, the method comprising (b) encoding the length-n vector x to the length-t vector xB, by vector-matrix product modulo m (pars. 45-46, signal vectors and propagation coefficients); (c) transmitting the coordinates of the length-t vector xB on t channels (pars. 27-29, transmit over channel); (d) retrieving the coordinates of the vector by computing xBC=xA by vector-matrix product modulo m (pars. 34-36, vector product); (e) for every coordinate of vector xBC=xA, filtering out the terms added as the linear combination of other coordinates of vector x (pars. 50-53, decomposition step to determine original matrices). Liu also teaches and suggests generating a matrix of propagation coefficients (pars. 43-48) and Kutin teaches choosing an appropriate integer modulus m, positive integer n, corresponding to the number of bits to be encoded, and generating n x n matrix A with integer elements where the diagonal elements of A differs modulo m from all the other elements of their column, and where A can be written as matrix product BC where B is an n x t matrix, C is a t x n matrix, where t is less than n (pp. 479-481). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to use the system of Kutin to determine a graph for the network of Liu. One of ordinary skill in the art would have been motivated to perform such a modification to provide secure network communications between a subset of elements (Kutin, pp.479-484).

Regarding claim 2, the combination of Liu and Kutin teaches wherein the modulus m is non-prime- power composite positive integer, the diagonal elements of matrix A are non-zero modulo any prime-divisors of m, and each non-diagonal elements of matrix A are zero modulo for at least one prime divisor of m (Kutin, pp. 479-481).

Regarding claim 5, the combination of Liu and Kutin teaches wherein two transmission networks are constructed between nodes R1, R2, ...,Rn and S1,S2, ...,Sn each node may send or receive a coordinate of a lenqth-n vector; in the first network nodes S~,$2, ...,S~ play the role of the senders of coordinates of vector x and R~, Rz,...,Rn play the role of the receivers; they receive the coordinates of xBC=xA, and in the second network R~, R2,...,R~ play the role of the senders of coordinates of vector x, and S~, $2,...,S~ play the role of the receivers, they receive the coordinates of xBC=xA (pars. 49-52, transmitters).

Allowable Subject Matter

27. Claims 3-4 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims,

Conclusion

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CERVETTI whose telephone number is (571)272-5861. The examiner can normally be reached on Monday-Tuesday and Thursday-Friday.

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David García Cervetti/
Primary Examiner, Art Unit 2436